# BLOQUE RETRÁCTIL
## TRX 3M11FT

**Descripción:**
El recorrido de la línea de conexión es según la distancia de trabajo, máximo hasta los 3 metros. El BR de TRX activa a los 0.60 metros de ocurrido un suceso. El equipo está preparado para realizar detención y restricción de caída para colaboradores de 130 lbs a 310 lbs.

**Características:**

- Material de la carcasa: Fabricada en nylon reforzado.
- Línea de 3M elaborada en cinta Dyneema de 2CM de ancho y 1.7mm de espesor.
- Metal: Mosquetón giratorio de acero.
- Fuerza de detención media: 1350lbs.
- Fuerza máxima de detención: 1800lbs máx.
- Distancia de detención: 42” (1.07m). Cuando esta anclado al anillo dorsal.
- Rango de capacidad, de peso en uso incluyendo ropa, herramientas y equipo: 90lbs – 310 lbs.
- Registro de inspección: Una persona autorizada debe inspeccionar al menos cada 5 meses.
- Nuestros bloques retráctiles son clase 1, solo tienen prestación para anclarse arriba del dorsal.

**Aplicaciones:**

- Detención de caídas para todas las industrias que lo requieran.
- Trabajos en alturas.

**Normativas:**

- Cumple con los requerimientos de ANSI Z359.14.2021: SRL-Clase 1.
- Cumple con los requerimientos de OSHA 29CFR 1926 (Sub parte M ).
- Vida útil: 5 años.

**Características:**

- Mantenga una Hoja de Vida de cada equipo para detención de caídas y realice inspecciones y validaciones de operatividad al menos una vez al año.
- Todos los procedimientos de instalación, armado y uso de sistemas retráctiles deben llevarse a cabo bajo la supervisión de una persona competente y calificada.
- Familiarícese con los procedimientos de Trabajo en Alturas en su empresa, reciba las capacitaciones correspondientes y practique antes de realizar cualquier tarea.
- Para la limpieza de las cintas y metales, se recomienda usar una esponja húmeda. Para manchas, utilice jabón suave o neutro, enjuague con agua fría y suspenda para secar.
- Almacene los equipos en un ambiente limpio, seco y sin exposición directa a la luz solar.
- Guarde las cuerdas o cables con cuidado, evitando que se enreden o suelten bruscamente.
- Verifique que el lugar de almacenamiento esté libre de roedores, sustancias químicas volátiles, corrosión, humo u otros elementos que puedan afectar la integridad del equipo.
- Cuando no esté en uso, almacene el equipo en un lugar protegido del calor, la luz excesiva, la humedad, las sustancias químicas y otros elementos que puedan degradarlo.

**Recomendaciones:**

- Toda instalación, armado y uso de sistemas retráctiles deben ser supervisados por una persona calificada.
- El uso incorrecto del equipo puede resultar en lesiones graves o la muerte.
- No suelte la cuerda o cable elongado al guardarlo, ya que la fuerza de retorno podría dañar el pin interior.
- Se permite un máximo de 1 accesorio por punto de conexión.
- Consulte las instrucciones para conocer las conexiones compatibles y el proceso de instalación correcto.
- Evite exponer el equipo a sustancias químicas, productos corrosivos, calor excesivo, descargas eléctricas, bordes afilados y superficies abrasivas.
- Nunca utilice productos corrosivos para limpiar los sistemas.
- Asegúrese de que los puntos de anclaje sean rígidos y capaces de soportar una carga mínima.
- Consultar el manual que viene con el producto.
- Suspender su uso en caso exista caída

INSPEC TESTING SERVICES

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# Test Report

## ANSI Z359.14-2021
## Self-Retracting Devices for Personal Fall Arrest and Rescue Systems

| | |
|---|---|
| **Report no:** | 2.23.12.20 |
| **Customer:** | Industrias Gabuteau SA<br>Jiron Paita 191 San Juan de Miraflores Lima<br>Peru |
| **Manufacturer:**<br>**as advised by the Customer** | Industrias Gabuteau SA |
| **Customer orders:** | T/1256 and T/1281 |
| **Orders received:** | 3 Dec. 2023 and 6 Dec. 2023 respectively |
| **Model:** | 10214001 Bloque Retractil TRX 3M11FT<br>BR-C11R |
| **Dates of tests:** | 21 Dec. 2023 to 26 Dec. 2023 |

**Signed:**

Steven Sum, Laboratory Manager

**Issued:** 29 December 2023

## Conditions

This report may be reproduced and distributed to your customers, provided that it is reproduced and distributed in full.

Specimens will be disposed of four weeks from the date of this report, unless otherwise instructed.

Opinions, comments and interpretations expressed in this report are shown in italics.

Copies of INSPEC interpretations referenced in this report are available upon request.

Tests marked ☒ are not included in our ANAB Scope of Accreditation.

This report has been provided in accordance with our standard Terms of Business, which can be viewed at, and printed from:

http://inspec-international.com/ToB.pdf

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**Summary of assessment ***

| Clause | Requirement | Assessment (See Key) | |
|---|---|---|---|
| **Submissions** | | **01** | **02** |
| 1.4 | Self-Retracting Device Classes | **Pass** | |
| 3.1.1 | Integral connectors | **Ltd** | |
| 3.1.2 | Locking function | **Ltd** | |
| 3.1.3 | Energy absorption | **Pass** | |
| 3.1.4 | Visual indicator | **Pass** | |
| 3.1.5 | Corrosion protection | **Pass** | |
| | Retraction tension (after salt spray test) | **Pass** | |
| 3.1.6 | Line Constituent of Self-Retracting Devices | **Ltd** | |
| 3.1.7 | Class 2 Energy absorber | | |
| 3.2.1 | Static strength of Self-Retracting Devices (SRDs) | **Pass** | |
| 3.2.2 | Static strength of Self-Retracting Lanyard, Personal Connector | | |
| 3.2.3 | Locking strength | | |
| 3.3.1 | Dynamic performance of SRD (ambient) + Retraction tension | **Pass** | |
| | Dynamic performance of SRD (hot) + Retraction tension | **Pass** | |
| | Dynamic performance of SRD (cold) + Retraction tension | **Pass** | |
| | Dynamic performance of SRD (wet) + Retraction tension | **Pass** | |
| 3.3.2 | Additional Dynamic performance of SRL-Ps | | |
| 3.3.3 | Dynamic performance for SRDs – Class 2 | | |
| 3.3.4.1 | Function (SRL-R) | | |
| 3.3.4.2 | Powered Operation (SRL-R) | | |
| 3.3.4.3 | Rescue, Post Fall Arrest (ambient) | | |
| | Rescue, Post Fall Arrest (hot) | | |
| | Rescue, Post Fall Arrest (cold) | | |
| | Rescue, Post Fall Arrest (wet) | | |
| 3.3.4.4 | Static strength (SRL-R) | | |
| 3.3.4.5 | Controlled Descent Functionality | | |
| 3.4 | Energy capacity | | **Pass** |
| 3.5 | Retraction tension | **Pass** | |

| Clause | Requirement | Assessment (See Key) | |
|---|---|---|---|
| **Submissions** | | **01** | **02** |
| 3.6.1 | Static test, for Dual SRL-Ps | | |
| 3.6.2 | SRL-P Dual Connection | | |
| 3.6.3 | Wrap-around strength, for SRL-Ps | | |
| 3.7 | Hybrid Self-Retracting Devices | | |
| 5.1 | Marking Requirements | **Ltd** | |
| 5.2 | Instruction Requirements | **Ltd** | |

**Key**

| | |
|---|---|
| | Shading shows the clauses requested. Any other clauses were not requested. |
| Pass | Requirement satisfied. |
| Ltd | Testing requested was insufficient completely to verify compliance with the clause. Refer to the "Result details" section for more information. |
| Fail | Requirement not satisfied. Refer to the "Result details" section for more information. |
| NAs | Assessment not carried out. |
| NAp | Requirement not applicable. |
| NT | Requested but not tested due to early termination following failure. |

* Assessment relates only to those specimens which were tested and are the subject of this report.

## Submissions details

### Submission 01

| Product | Quantity | Date received | INSPEC specimen no. |
|---|---|---|---|
| Webbing, part # 750020 | 5 m | 16 Nov. 2023 | 2L37101A to 01E (cut into 5 equal lengths) |
| Self-Retracting Devices, webbing, 15ft model SRL-C15 | 18 | | 2L37102 to 2L37119 |
| Self-Retracting Devices, webbing, 15ft model SRL-C15 (42-inch length) | 03 | | 2L37120 to 2L37122 |
| Self-Retracting Devices, webbing, 15ft model SRL-C15 (Short length) | 03 | | 2L37123 to 2L37125 |
| Self-Retracting Devices, webbing, 11ft model SRL-C11 | 03 | | 2L37301 to 2L37303 |

### Submission 02

| Product | Quantity | Date received | INSPEC specimen no. (2L371+) |
|---|---|---|---|
| Self-Retracting Devices, webbing, model SRL-C15 | 03 | 7 Dec. 2023 | 26 to 28 |
| Self-Retracting Devices, webbing, model SRL-C15 (42-inch length) | 06 | | 29 to 35 |

## Procedures

The specimens detailed within the submissions above were used for the tests covered by this report.

Testing was performed in accordance with ANSI Z359.14-2021 unless otherwise specified below. Reference should be made to the standard when reading this report.

Unless stated otherwise, specimens were tested in the condition as received by INSPEC.

Testing was performed at INSPEC's laboratory in Kunshan, China.

The manufacturer made the following declarations:

Self-Retracting Lanyard, model SRL-C11 is a variant model of SRL-C15. Both models are from the same family of products. The design, materials, components and construction are the same. The only difference is the length of lanyard.

Self-Retracting Lanyard, model SRL-C15 incorporates the longest lanyard. Performance testing was carried out on this model.

To avoid duplicate testing, performance test results of model SRL-C15 are shared across to model SRL-C11.

**Result details**

### 1.3 Self-Retracting Device Types

All specimens were assessed.

*The Self-Retracting Devices were claimed by the manufacturer as Self-Retracting Lanyards (SRLs)* **Pass**

### 1.4 Self-Retracting Device Classes

All specimens were assessed.

*The specimens were claimed by the manufacturer as Class 1 devices.*

It was specified in the User Instructions that the devices shall be used only on overhead anchorages and subject to a maximum free-fall of 2 feet (610 mm) or less, in practical applications. **Pass**

### 3. Requirements

### 3.1 General Requirements

### 3.1.1 Integral Connectors

Specimen 2L37105 was assessed.

The specimen incorporated one integral snaphook. Testing of the integral snaphook was not requested. **NAs**

The specimen incorporated an integral ring at the top of the device intended to accept a connector. The ring was designed to minimize the possibility of rollout of a mating snaphook or carabiner. **Pass**

### 3.1.2 Locking Function

Specimen 2L37105 was assessed.

The specimen was automatic in its locking (fall stopping) function. **Pass**

It was not possible to over-ride the self-locking feature of the specimen when in use. **Pass**

The design of working parts, their location and the protection afforded to them such as to prevent the possibility of performance being impaired by casual interference was not assessed. **NAs**

### 3.1.3 Energy Absorption

Specimen 2L37105 was assessed.

The specimen incorporated energy absorption function. It was available throughout the usable working range of the device. **Pass**

### 3.1.4 Visual Indicator

Specimen 2L37105 was assessed.

The specimen did include a visual indicator. The visual indicator was incorporated in the integral snaphook. **Pass**

The visual indicator did activate during the dynamic performance test described in section 3.3.1. **Pass**

### 3.1.5 Corrosion Protection

Specimens 2L37102, 2L37103 and 2L37104 were assessed.

Corrosion protection was afforded to all elements (parts) of the specimens. **Pass**

After the salt spray test, the specimens operated as intended. **Pass**

The specimens did not show signs of corrosion. **Pass**

After the salt spray test, the line constituent of the specimens could pay out, retract and locked. **Pass**

After the salt spray test, the retraction tension was as specified in 3.5. See below for detailed test results. **Pass**

### 3.5 Retraction Tension - after corrosion test

Specimens 2L37102, 2L37103 and 2L37104 were assessed.

**3.5.1** The retraction tension of the self-retracting device line, in addition to that required to retract the weight of the line constituent was not less than 1.25 pounds, nor more than 25 pounds, at any point in the range of motion of the line constituent. **Pass**

**3.5.2** When fully retracted after each of the specified extractions, the line constituent remained extended from the SRL body by the amounts reported in the tables below. These are less than the 24 inches maximum permitted for Class 1 device. **Pass**

Specimen 2L37102 was assessed.

| Length of line extracted | Tension (lbf) | Length of line remaining extended (inches) | |
|---|---|---|---|
| **12 inches** | 1.32 | 11.42 | **Pass** |
| **50%** | 2.76 | 11.42 | **Pass** |
| **100%** | 5.95 | 11.42 | **Pass** |

Specimen 2L37103 was assessed.

| Length of line extracted | Tension (lbf) | Length of line remaining extended (inches) | |
|---|---|---|---|
| **12 inches** | 2.65 | 11.02 | **Pass** |
| **50%** | 5.29 | 11.02 | **Pass** |
| **100%** | 5.62 | 11.02 | **Pass** |

Specimen 2L37104 was assessed.

| Length of line extracted | Tension (lbf) | Length of line remaining extended (inches) | |
|---|---|---|---|
| **12 inches** | 3.31 | 11.22 | **Pass** |
| **50%** | 5.62 | 11.22 | **Pass** |
| **100%** | 5.73 | 11.22 | **Pass** |

### 3.1.6 Line constituent of Self-Retracting Devices

#### 3.1.6.1 Webbing and Synthetic Rope.

Specimens 2L37101A to 01E were assessed.

The material and characteristics of the webbing used were not assessed. Manufacturer to certify. **NAs**

When statically tested, the specimens withstood the minimum tensile load of 4,500 pounds. **Pass**

#### 3.1.6.2 Wire rope.

This clause was not applicable to the product tested. **NAp**

#### 3.1.6.3 Terminations

Specimen 2L37123 was assessed.

The terminations of the constituent line met the requirements of 3.2.1 **Pass**

### 3.2 Static Strength

### 3.2.1 Static Strength of Self-Retracting Devices (SRDs)

Specimens 2L37123, 2L37124 and 2L37125 were assessed.

The specimens withstood, without breaking, the tensile load of 3,600 pounds when statically applied. **Pass**

### 3.3 Dynamic Performance

### 3.3.1 Dynamic Performance – ambient condition

Specimens 2L37105, 2L37106 and 2L37107 were assessed.

3.3.1.1 During the dynamic performance tests, all specimens locked and remained locked until released. **Pass**

3.3.1.2 After the dynamic performance tests, all specimens satisfied the retraction tension requirements of 3.5. See table below for detailed test results. **Pass**

3.3.1.3 Following the dynamic performance tests, all visual indicators activated to provide clear evidence that the devices have been impact loaded. **Pass**

3.3.1.4 The maximum arrest force of the specimens were recorded as follows:

Specimen 2L37105 was 760 pounds. **Pass**
Specimen 2L37106 was 778 pounds. **Pass**
Specimen 2L37107 was 931 pounds. **Pass**

These values were less than the maximum 1.800 pounds permitted. See Annex 1 for the plots of force versus time.

The average arrest force of the specimens were recorded as follows:

Specimen 2L37105 was 657 pounds. **Pass**
Specimen 2L37106 was 658 pounds. **Pass**
Specimen 2L37107 was 655 pounds. **Pass**

These values were less than the maximum 1,350 pounds permitted. See Annex 1 for the plots of force versus time.

The arrest distances of the specimens were recorded as follow:

Specimen 2L37105 was 24.3 inches. **Pass**
Specimen 2L37106 was 24.2 inches. **Pass**
Specimen 2L37107 was 29.7 inches. **Pass**

These values were less than the maximum 42 inches permitted.

### 3.5 Retraction Tension test - after dynamic performance test (ambient condition)

Specimens 2L37105, 2L37106 and 2L37107 were assessed.

**3.5.1** The retraction tension of the self-retracting device line, in addition to that required to retract the weight of the line constituent was not less than 1.25 pounds, nor more than 25 pounds, at any point in the range of motion of the line constituent. **Pass**

**3.5.2** When fully retracted after each of the specified extractions, the line constituent remained extended from the SRL body by the amounts reported in the tables below. These are less than the 24 inches maximum permitted for class 1 device. **Pass**

Specimen 2L37105 was assessed.

| Length of line extracted | Tension (lbf) | Length of line remaining extended (inches) | |
|---|---|---|---|
| **12 inches** | 1.98 | 11.42 | **Pass** |
| **50%** | 3.09 | 11.42 | **Pass** |
| **100%** | 4.85 | 11.42 | **Pass** |

Specimen 2L37106 was assessed.

| Length of line extracted | Tension (lbf) | Length of line remaining extended (inches) | |
|---|---|---|---|
| **12 inches** | 1.76 | 11.42 | **Pass** |
| **50%** | 3.20 | 11.42 | **Pass** |
| **100%** | 5.29 | 11.42 | **Pass** |

Specimen 2L37107 was assessed.

| Length of line extracted | Tension (lbf) | Length of line remaining extended (inches) | |
|---|---|---|---|
| **12 inches** | 1.87 | 11.42 | **Pass** |
| **50%** | 2.54 | 11.42 | **Pass** |
| **100%** | 5.29 | 11.42 | **Pass** |

### 3.3.1 Dynamic Performance – hot condition

Specimens 2L37108, 2L37109 and 2L37110 were assessed.

3.3.1.1 During the dynamic performance tests, all specimens locked and remained locked until released. **Pass**

3.3.1.2 After the dynamic performance tests, all specimens satisfied the retraction tension requirements of 3.5. See table below for detailed test results. **Pass**

3.3.1.3 Following the dynamic performance tests, all visual indicators activated to provide clear evidence that the devices have been impact loaded. **Pass**

3.3.1.4 The maximum arrest force of the specimens were recorded as follows:

Specimen 2L37108 was 830 pounds. **Pass**
Specimen 2L37109 was 810 pounds. **Pass**
Specimen 2L37110 was 876 pounds. **Pass**

These values were less than the maximum 1.800 pounds permitted. See Annex 1 for the plots of force versus time.

The average arrest force of the specimens were recorded as follows:

Specimen 2L37108 was 690 pounds. **Pass**
Specimen 2L37109 was 696 pounds. **Pass**
Specimen 2L37110 was 704 pounds. **Pass**

These values were less than the maximum 1,575 pounds permitted. See Annex 1 for the plots of force versus time.

The arrest distances of the specimens were recorded as follow:

Specimen 2L37108 was 25.7 inches. **Pass**
Specimen 2L37109 was 26.4 inches. **Pass**
Specimen 2L37110 was 26.1 inches. **Pass**

These values were less than the maximum 42 inches permitted.

### 3.5 Retraction Tension test - after dynamic performance test (hot condition)

Specimens 2L37108, 2L37109 and 2L37110 were assessed.

**3.5.1** The retraction tension of the self-retracting device line, in addition to that required to retract the weight of the line constituent was not less than 1.25 pounds, nor more than 25 pounds, at any point in the range of motion of the line constituent. **Pass**

**3.5.2** When fully retracted after each of the specified extractions, the line constituent remained extended from the SRL body by the amounts reported in the tables below. These are less than the 24 inches maximum permitted for class 1 device. **Pass**

Specimen 2L37108 was assessed.

| Length of line extracted | Tension (lbf) | Length of line remaining extended (inches) | |
|---|---|---|---|
| **12 inches** | 2.65 | 11.42 | **Pass** |
| **50%** | 2.98 | 11.42 | **Pass** |
| **100%** | 4.74 | 11.42 | **Pass** |

Specimen 2L37109 was assessed.

| Length of line extracted | Tension (lbf) | Length of line remaining extended (inches) | |
|---|---|---|---|
| **12 inches** | 1.76 | 11.42 | **Pass** |
| **50%** | 2.76 | 11.42 | **Pass** |
| **100%** | 5.29 | 11.42 | **Pass** |

Specimen 2L37110 was assessed.

| Length of line extracted | Tension (lbf) | Length of line remaining extended (inches) | |
|---|---|---|---|
| **12 inches** | 1.87 | 11.02 | **Pass** |
| **50%** | 2.76 | 11.02 | **Pass** |
| **100%** | 5.62 | 11.02 | **Pass** |

### 3.3.1 Dynamic Performance – cold condition

Specimens 2L37301, 2L37302 and 2L37303 were assessed.

3.3.1.1 During the dynamic performance tests, all specimens locked and remained locked until released. **Pass**

3.3.1.2 After the dynamic performance tests, all specimens satisfied the retraction tension requirements of 3.5. See table below for detailed test results. **Pass**

3.3.1.3 Following the dynamic performance tests, all visual indicators activated to provide clear evidence that the devices have been impact loaded. **Pass**

3.3.1.4 The maximum arrest force of the specimens were recorded as follows:

Specimen 2L37301 was 819 pounds. **Pass**
Specimen 2L37302 was 806 pounds. **Pass**
Specimen 2L37303 was 843 pounds. **Pass**

These values were less than the maximum 1.800 pounds permitted. See Annex 1 for the plots of force versus time.

The average arrest force of the specimens were recorded as follows:

Specimen 2L37301 was 673 pounds. **Pass**
Specimen 2L37302 was 697 pounds. **Pass**
Specimen 2L37303 was 713 pounds. **Pass**

These values were less than the maximum 1,575 pounds permitted. See Annex 1 for the plots of force versus time.

The arrest distances of the specimens were recorded as follow:

Specimen 2L37301 was 21.0 inches. **Pass**
Specimen 2L37302 was 16.4 inches. **Pass**
Specimen 2L37303 was 17.2 inches. **Pass**

These values were less than the maximum 42 inches permitted.

### 3.5 Retraction Tension test - after dynamic performance test (cold condition)

Specimens 2L37301, 2L37302 and 2L37303 were assessed.

**3.5.1** The retraction tension of the self-retracting device line, in addition to that required to retract the weight of the line constituent was not less than 1.25 pounds, nor more than 25 pounds, at any point in the range of motion of the line constituent. **Pass**

**3.5.2** When fully retracted after each of the specified extractions, the line constituent remained extended from the SRL body by the amounts reported in the tables below. These are less than the 24 inches maximum permitted for class 1 device. **Pass**

Specimen 2L37301 was assessed.

| Length of line extracted | Tension (lbf) | Length of line remaining extended (inches) | |
|---|---|---|---|
| **12 inches** | 1.65 | 11.42 | **Pass** |
| **50%** | 2.43 | 11.42 | **Pass** |
| **100%** | 4.52 | 11.42 | **Pass** |

Specimen 2L37302 was assessed.

| Length of line extracted | Tension (lbf) | Length of line remaining extended (inches) | |
|---|---|---|---|
| **12 inches** | 1.76 | 11.22 | **Pass** |
| **50%** | 2.98 | 11.22 | **Pass** |
| **100%** | 4.52 | 11.22 | **Pass** |

Specimen 2L37303 was assessed.

| Length of line extracted | Tension (lbf) | Length of line remaining extended (inches) | |
|---|---|---|---|
| **12 inches** | 1.87 | 11.61 | **Pass** |
| **50%** | 3.42 | 11.61 | **Pass** |
| **100%** | 4.85 | 11.61 | **Pass** |

### 3.3.1 Dynamic Performance – wet condition

Specimens 2L37114, 2L37115 and 2L37116 were assessed.

3.3.1.1 During the dynamic performance tests, all specimens locked and remained locked until released. **Pass**

3.3.1.2 After the dynamic performance tests, all specimens satisfied the retraction tension requirements of 3.5. See table below for detailed test results. **Pass**

3.3.1.3 Following the dynamic performance tests, all visual indicators activated to provide clear evidence that the devices have been impact loaded. **Pass**

3.3.1.4 The maximum arrest force of the specimens were recorded as follows:

Specimen 2L37114 was 764 pounds. **Pass**
Specimen 2L37115 was 826 pounds. **Pass**
Specimen 2L37116 was 817 pounds. **Pass**

These values were less than the maximum 1.800 pounds permitted. See Annex 1 for the plots of force versus time.

The average arrest force of the specimens were recorded as follows:

Specimen 2L37114 was 672 pounds. **Pass**
Specimen 2L37115 was 704 pounds. **Pass**
Specimen 2L37116 was 681 pounds. **Pass**

These values were less than the maximum 1,575 pounds permitted. See Annex 1 for the plots of force versus time.

The arrest distances of the specimens were recorded as follow:

Specimen 2L37114 was 28.1 inches. **Pass**
Specimen 2L37115 was 29.6 inches. **Pass**
Specimen 2L37116 was 24.6 inches. **Pass**

These values were less than the maximum 42 inches permitted.

### 3.5 Retraction Tension test - after dynamic performance test (wet condition)

Specimens 2L37114, 2L37115 and 2L37116 were assessed.

**3.5.1** The retraction tension of the self-retracting device line, in addition to that required to retract the weight of the line constituent was not less than 1.25 pounds, nor more than 25 pounds, at any point in the range of motion of the line constituent. **Pass**

**3.5.2** When fully retracted after each of the specified extractions, the line constituent remained extended from the SRL body by the amounts reported in the tables below. These are less than the 24 inches maximum permitted for class 1 device. **Pass**

Specimen 2L37114 was assessed.

| Length of line extracted | Tension (lbf) | Length of line remaining extended (inches) | |
|---|---|---|---|
| **12 inches** | 1.50 | 11.42 | **Pass** |
| **50%** | 2.98 | 11.42 | **Pass** |
| **100%** | 4.85 | 11.42 | **Pass** |

Specimen 2L37115 was assessed.

| Length of line extracted | Tension (lbf) | Length of line remaining extended (inches) | |
|---|---|---|---|
| **12 inches** | 1.65 | 11.42 | **Pass** |
| **50%** | 2.87 | 11.42 | **Pass** |
| **100%** | 4.96 | 11.42 | **Pass** |

Specimen 2L37116 was assessed.

| Length of line extracted | Tension (lbf) | Length of line remaining extended (inches) | |
|---|---|---|---|
| **12 inches** | 2.20 | 11.42 | **Pass** |
| **50%** | 3.50 | 11.42 | **Pass** |
| **100%** | 4.96 | 11.42 | **Pass** |

### 3.4 Energy Capacity

Specimens 2L37129, 2L37130 and 2L37132 were assessed.

Each SRL incorporated a rotary brake system. When tested in accordance with 4.4, the maximum arrest force of the specimens were recorded as follows:

Specimen 2L37129 was 1149 pounds. **Pass**
Specimen 2L37130 was 1269 pounds. **Pass**
Specimen 2L37132 was 1300 pounds. **Pass**

These values were less than the maximum 1800 pounds permitted. See Annex 1 for the plots of force versus time.

### 3.5 Retraction Tension

Specimens 2L37117, 2L37118 and 2L37119 were assessed.

**3.5.1** The retraction tension of the self-retracting device line, in addition to that required to retract the weight of the line constituent was not less than 1.25 pounds, nor more than 25 pounds, at any point in the range of motion of the line constituent. **Pass**

**3.5.2** When fully retracted after each of the specified extractions, the line constituent remained extended from the SRL body by the amounts reported in the tables below. These are less than the 24 inches maximum permitted. **Pass**

Specimen 2L37117 was assessed.

| Length of line extracted | Tension (lbf) | Length of line remaining extended (inches) | |
|---|---|---|---|
| **12 inches** | 2.09 | 11.81 | **Pass** |
| **50%** | 2.98 | 11.81 | **Pass** |
| **100%** | 5.07 | 11.81 | **Pass** |

Specimen 2L37118 was assessed.

| Length of line extracted | Tension (lbf) | Length of line remaining extended (inches) | |
|---|---|---|---|
| **12 inches** | 1.76 | 11.02 | **Pass** |
| **50%** | 2.98 | 11.02 | **Pass** |
| **100%** | 4.96 | 11.02 | **Pass** |

Specimen 2L37119 was assessed.

| Length of line extracted | Tension (lbf) | Length of line remaining extended (inches) | |
|---|---|---|---|
| **12 inches** | 2.65 | 11.22 | **Pass** |
| **50%** | 2.76 | 11.22 | **Pass** |
| **100%** | 4.96 | 11.22 | **Pass** |

## 5 Markings and Instructions

### 5.1 Marking Requirements

Specimen 2L37301 was assessed.

| | | |
|---|---|---|
| **5.1.1** | Warnings shall be in English | **Pass** |
| a | Shall meet the formatting requirements of the reference in Section 7.7. Manufacturer to certify. | **NAs** |
| b | Non-warning markings shall be in English or pictorial format. | **Pass** |
| **5.1.2** | The legibility and attachment of required markings shall endure for the life of the component, subsystem or system been marked. Manufacturer to certify. | **NAs** |
| | *Markings were legible and attached after testing was completed.* | |
| | When pressure-sensitive labels are used, they shall comply with the applicable provision of the reference in Section 7.6. Manufacturer to certify. | **NAs** |
| **5.1.3** | Self-retracting devices shall be marked to identify: | |
| a | part number and model designation; [SRL-C11] | **Pass** |
| b | year of manufacture; | **Pass** |
| c | manufacturer's name or logo; [JECH] | **Pass** |
| d | capacity range, including clothing, tools and equipment (130-310 lbs); | **Pass** |
| e | maximum allowable free fall distance; [2 ft] | **Pass** |
| f | unique ID number; | **Pass** |
| g | standard no. (Z359.14-2021); [ANSI Z359.14-2021] | **Pass** |
| h | how to inspect visual indicator; | **Pass** |
| i | warning to follow the manufacturer's instructions included with the equipment at time of shipment from the manufacturer; | **Pass** |
| j | warning of the need for inspection in accordance with the manufacturer's instructions; | **Pass** |
| k | the fiber or other materials used in the lanyard construction and any limitation of such materials; [20mm Dyneema webbing] | **Pass** |
| l | the lanyard working length; [11 ft] | **Pass** |
| m | maximum arresting force; [1800 lbs] | **Pass** |
| n | average arresting force; [1350 lbs] | **Pass** |
| o | arrest distance; [42 inches] | **Pass** |
| p | guidance with respect to clearance requirements; | **Pass** |
| q | proper installation means; | **Pass** |
| r | warning of the need for testing of the device for locking and retraction before each use; | **Pass** |
| s | warning of the need to avoid lanyard contact with sharp edges and abrasive surface (not required for Class 2 SRDs); | **Pass** |
| t | suitability for use with horizontal lifelines; [Not suitable] | **Pass** |

| | | |
|---|---|---|
| u | suitability for horizontal use. [Not suitable] | **Pass** |

**5.1.4 Class Designation Icon**

| | | |
|---|---|---|
| a | class designation icon as defined in figure 14. | **Pass** |
| b | icon in a conspicuous location on the device; | **Pass** |
| c | appropriate color-coded icon designating the class of the device; | **Pass** |
| d | for SRLs and SRL-Rs, the icon shall be a minimum of 1-inch square (25 mm); | **Pass** |
| e | for SRL-Ps, the icon shall be a minimum of 0.5-inch square (12.5 mm). See Fig 14; | **NAp** |

## 5.2 Instruction Requirements

The instructions to users have been assessed as detail below, with reference only to the relevant requirements of the Standard.

INSPEC Technical Services has not assessed these instructions with respect to claims made by the manufacturer outside of these requirements, and therefore accepts no responsibility for the legitimacy of any such claims.

*User instructions in English were provided electronically and used for assessment.*

| | | |
|---|---|---|
| **5.2.1** | Instructions shall be provided to the user printed in English at the time of shipment from the manufacturer. Alternate media may be used for the dissemination of instructions, but only addition to, not in lieu of printed instructions. | **Ltd** |
| **5.2.2** | **Instructions shall contain the following information:** | |
| a | a statement that the manufacturer's instructions shall be provided to users; | **Pass** |
| b | manufacturer's name, address and telephone number; | **Pass** |
| c | manufacturer's part number or model designation for the equipment; | **Pass** |
| d | intended use and purpose of the equipment; | **Pass** |
| e | proper method of use and limitations on use of the equipment; | **Pass** |
| f | illustrations showing locations of markings on the equipment; | **Pass** |
| g | reproduction of printed information on all markings; | **Pass** |
| h | inspection procedures required to assure the equipment is in serviceable condition and operating correctly; | **Pass** |
| i | anchorage requirements; | **Pass** |
| j | criteria for discarding equipment which fails inspection; | **Pass** |
| k | procedures for cleaning, maintenance and storage; | **Pass** |
| l | reference to the Z359 standards and applicable regulations governing occupational safety; | **Pass** |
| m | proper installation means and limitations on the type of anchorage connectors used, if any; | **Pass** |
| n | the diameter of rope or wire rope, and width and thickness of webbing used in the lanyard; | **Pass** |
| o | the fiber or other materials used in the lanyard construction; | **Pass** |
| p | the lanyard length; | **Pass** |
| q | suitability for use with horizontal lifelines, deforming or flexible anchorages; | **Pass** |
| r | the maximum and average arresting force when dynamically tested in ambient conditions, in accordance with the requirements of this standard; | **Pass** |
| s | the arrest distance when dynamically tested in accordance with the requirements of this standard; | **Pass** |
| t | how to determine fall clearance, which shall include a safety margin; | **Pass** |
| u | testing of the device for locking before each use. | **Pass** |

| | | |
|---|---|---|
| **5.2.3** | Instructions shall require that only the equipment manufacturer, or persons or entities authorized in writing by the manufacturer, shall make repairs to equipment. | **Pass** |
| **5.2.4** | Instructions shall require the user to remove equipment from field service if it has been subjected to the forces of arresting a fall or affecting a rescue. | **Pass** |
| **5.2.5** | Instructions shall require the user to have a written rescue plan and the means at hand to implement it when using the equipment. | **Pass** |
| **5.2.6** | **Instructions shall provide warnings regarding:** | |
| a | altering the equipment; | **Pass** |
| b | misusing the equipment; | **Pass** |
| c | using combinations of components or subsystems, or both, which may affect or interfere with the safe function of each other; | **Pass** |
| d | exposing the equipment to chemicals, high heat, severe cold or other harsh environments which may produce a harmful effect and to consult the manufacturer in cases of doubt; | **Pass** |
| e | using the equipment around moving machinery and electrical hazards; | **Pass** |
| f | using the equipment near sharp edges and abrasive surfaces; | **Pass** |
| g | risk of striking an object or obstruction during a swing fall; | **Pass** |
| h | avoiding the use of SRDs in applications where engulfment hazards exist; | **Pass** |
| i | that the consequences of improperly using the device, not following instructions or marking may cause serious injury or death. | **Pass** |

## Estimates of the uncertainty of measurement

| Clause | Test | | Uncertainty |
|---|---|---|---|
| 3.1.1 | Integral Connectors | | See test report |
| 3.1.2 | Locking Function | | Not applicable |
| 3.1.3 | Energy Absorption | | Not applicable |
| 3.1.4 | Visual Indicator | | Not applicable |
| 3.1.5 | Corrosion Protection | | Not applicable |
| 3.1.6.1 | Webbing and Synthetic Rope | Material | Not applicable |
| | | Static strength | See Note 1 |
| 3.1.6.2 | Wire rope | | Not applicable |
| 3.1.6.3 | Termination | | Not applicable |
| 3.1.7 | Class 2 Energy Absorber | | See test report |
| 3.2 | Static Strength | | See Note 1 |
| 3.3.1 | Dynamic performance of SRDs (all conditions) | Force | ±3.3% |
| | | Arrest distance | ±0.5% |
| 3.3.2 | Additional Dynamic performance of SRL-Ps | | ±3.3% |
| 3.3.3 | Dynamic performance of SRDs – Class 2 | | Not assessed |
| 3.3.4.1 | Function | Vertical displacement | ±0.6% |
| 3.3.4.2 | Power Operation | | See Note 1 |
| 3.3.4.3 | Rescue, Post Fall Arrest | Vertical displacement | ±1.7% |
| 3.3.4.4 | Static Strength (SRL-R) | | See Note 1 |
| 3.3.4.5 | Controlled Descent Functionality | | See test report |
| 3.4 | Energy Capacity | Force | ±3.3% |
| 3.5 | Retraction Tension | | ±0.5% |
| 3.6.1 | Static test - Dual SRL-Ps | | See Note 1 |
| 3.6.2 | SRL-P Dual connection | | Not applicable |
| 3.6.3 | Wrap-around strength for SRL-Ps | | See Note 1 |
| 5 | Marking and Instructions | | Not applicable |

Note 1 The acceptance criterion for this test is a straightforward “Pass/Fail”, rather than a numerical value. Consequently, as there is no value to be reported, uncertainty has not been reported either.

Note 2 The uncertainty value is based on a standard uncertainty multiplied by a coverage factor k = 2, which provides for a confidence level of approximately 95%. Values expressed as a percentage (%) are relative.

Note 3 It should be noted that the above values have not been taken into account when making assessment to the pass/fail criteria.

# ANNEX

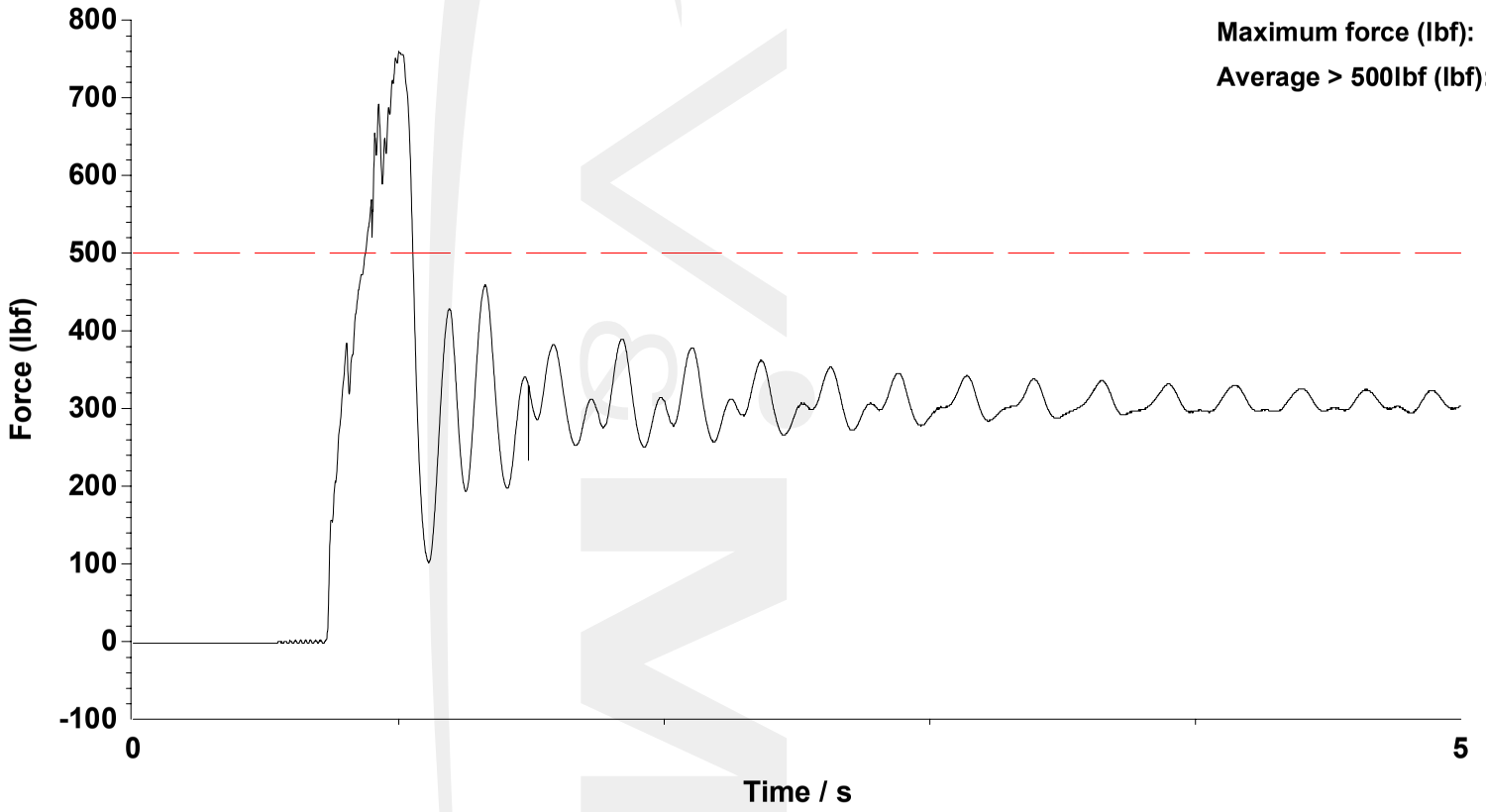
This Annex comprises two sections.

| | | |
|---|---|---|
| 1. | Plot of arrest force versus time – ambient | (3 pages) |
| | Plot of arrest force versus time – hot | (3 pages) |
| | Plot of arrest force versus time – cold | (3 pages) |
| | Plot of arrest force versus time – wet | (3 pages) |
| | Plot of arrest force versus time – energy capacity | (3 pages) |
| 2. | Photograph of the product tested. | (1 page) |

END OF REPORT

INSPEC Technical Services

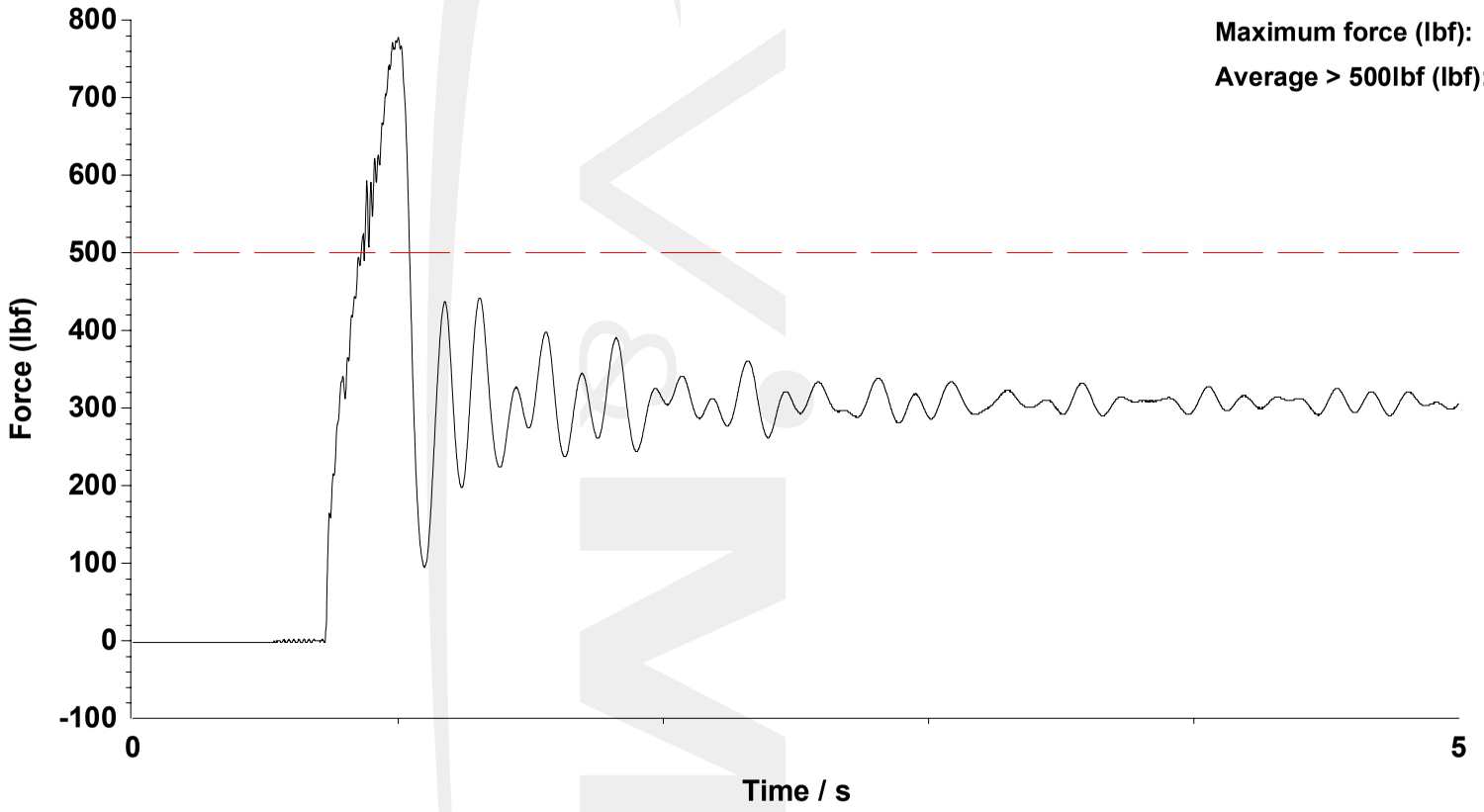
| | |
|---|---|
| Technician: | LJ |
| Standard | ANSI Z359.14:2021 Self-Retracting lanyard |
| Sample / File name: | 2L37105 |
| Drop item | Test weight, 141 kg |
| Orientation/Attachment Point: | Centre eyelot |
| Time and Date of Test: | 16:01 22/11/23 |




Results do not achieve full ANAB status until a formal test report has been issued.

INSPEC Technical Services

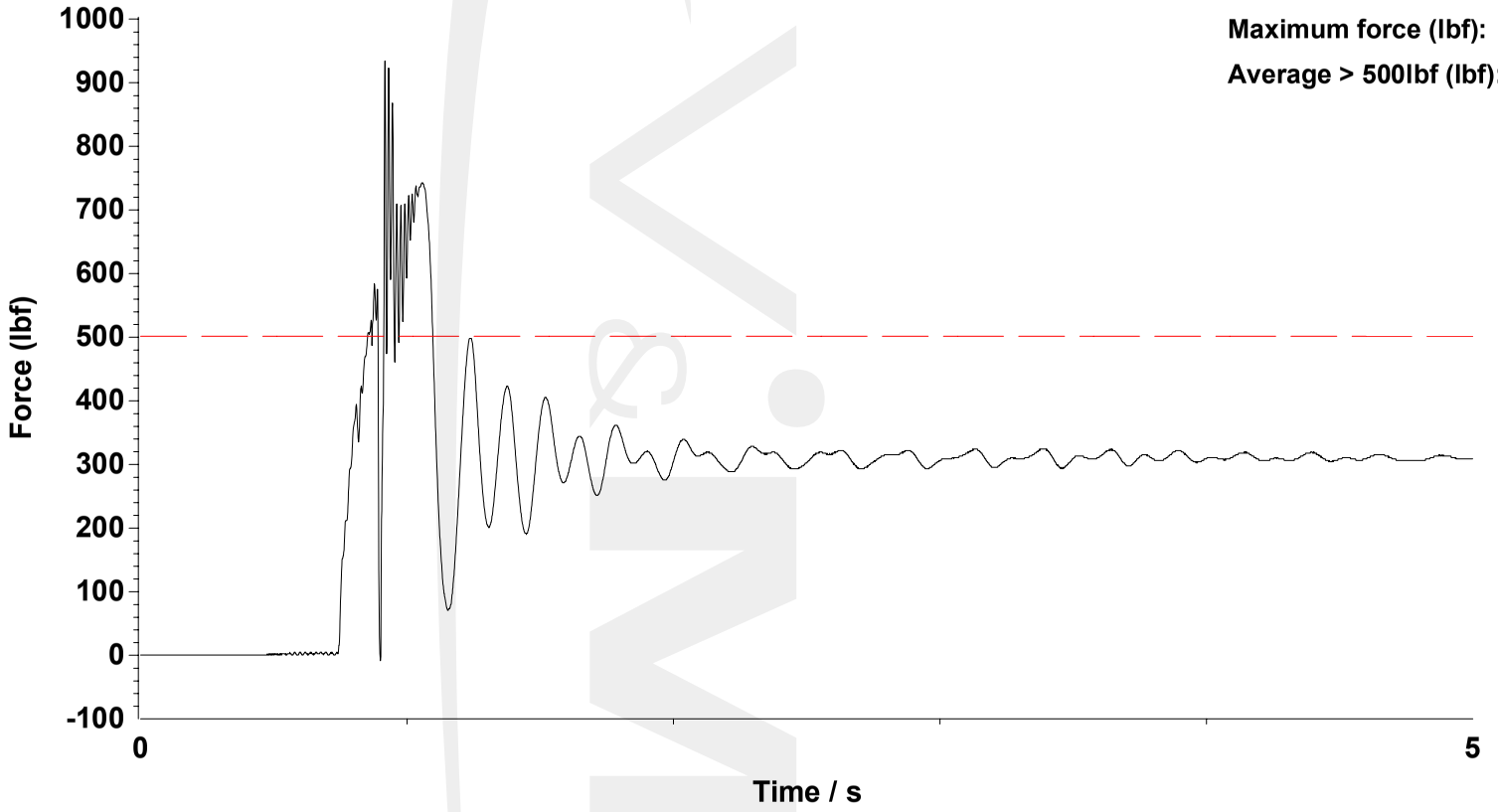
| | |
|---|---|
| Technician: | LJ |
| Standard | ANSI Z359.14:2021 Self-Retracting lanyard |
| Sample / File name: | 2L37106 |
| Drop item | Test weight, 141 kg |
| Orientation/Attachment Point: | Centre eyelot |
| Time and Date of Test: | 16:06 22/11/23 |




Results do not achieve full ANAB status until a formal test report has been issued.

INSPEC Technical Services

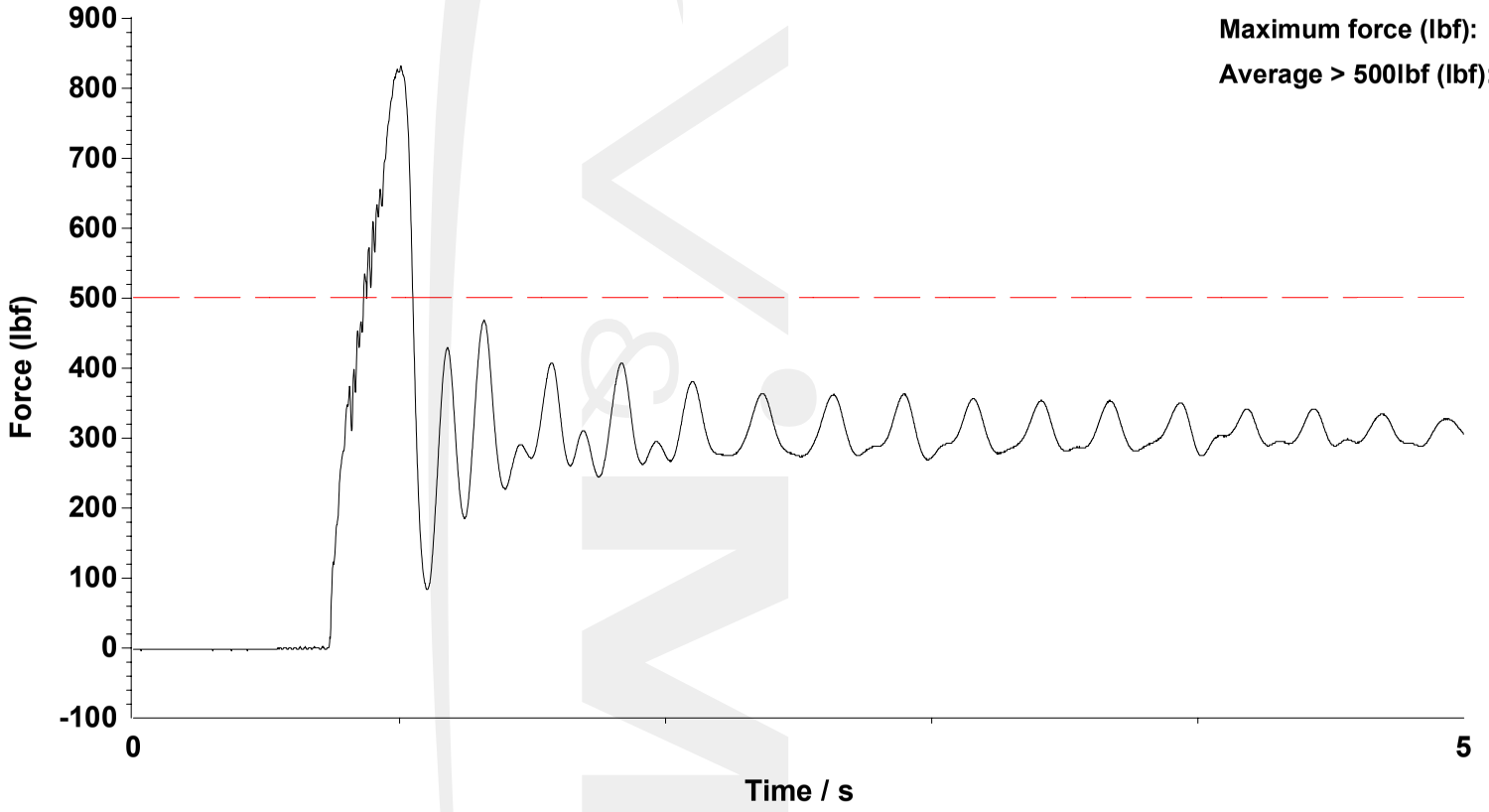
| | |
|---|---|
| Technician: | LJ |
| Standard | ANSI Z359.14:2021 Self-Retracting lanyard |
| Sample / File name: | 2L37107 |
| Drop item | Test weight, 141 kg |
| Orientation/Attachment Point: | Centre eyelot |
| Time and Date of Test: | 16:10 22/11/23 |




Results do not achieve full ANAB status until a formal test report has been issued.

INSPEC Technical Services

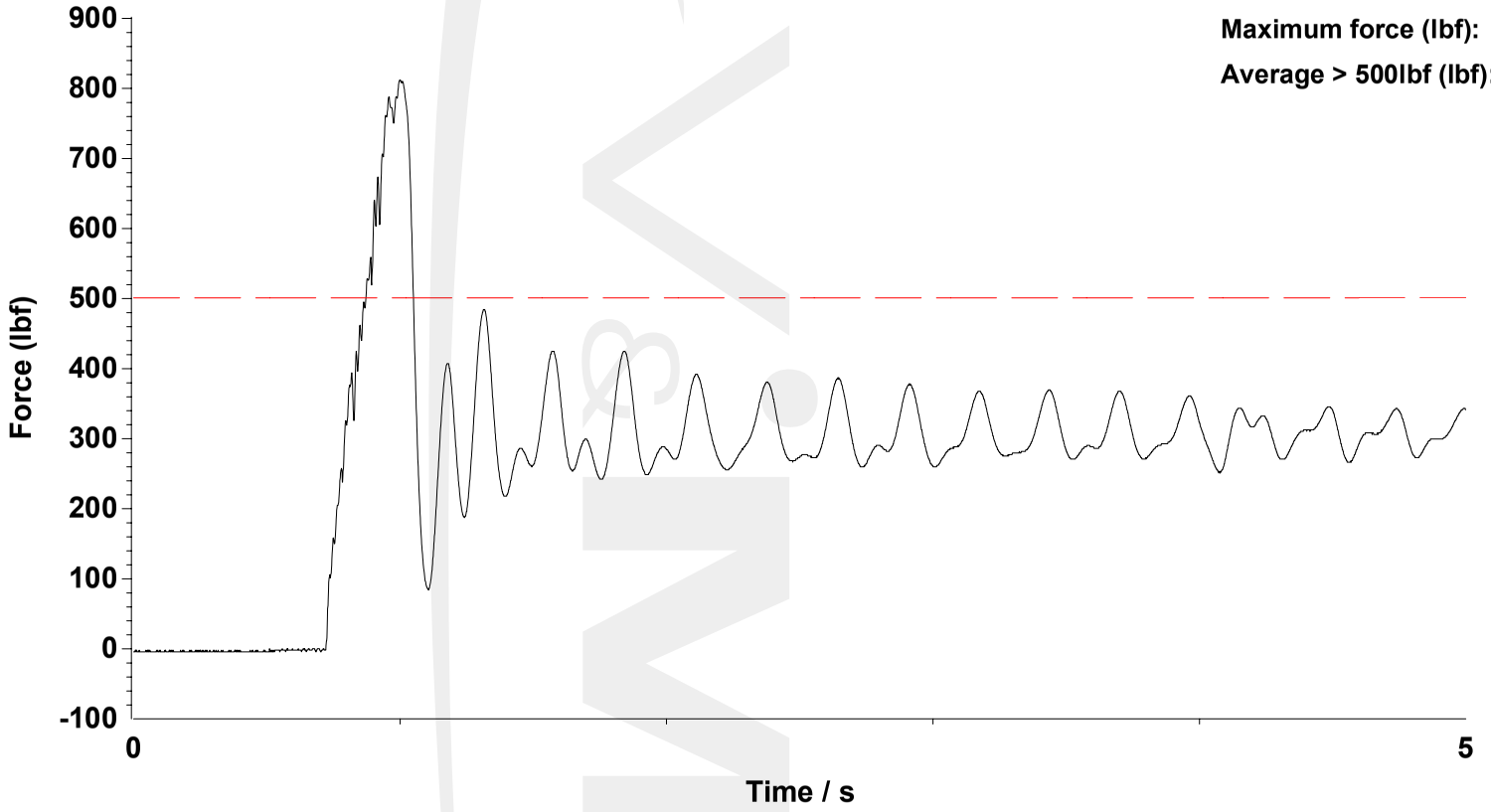
| | |
|---|---|
| Technician: | LJ |
| Standard | ANSI Z359.14:2021 Self-Retracting lanyard |
| Sample / File name: | 2L37108 |
| Drop item | Test weight, 141 kg |
| Orientation/Attachment Point: | Centre eyebolt |
| Time and Date of Test: | 17:57 21/11/23 |




Results do not achieve full ANAB status until a formal test report has been issued.

INSPEC Technical Services

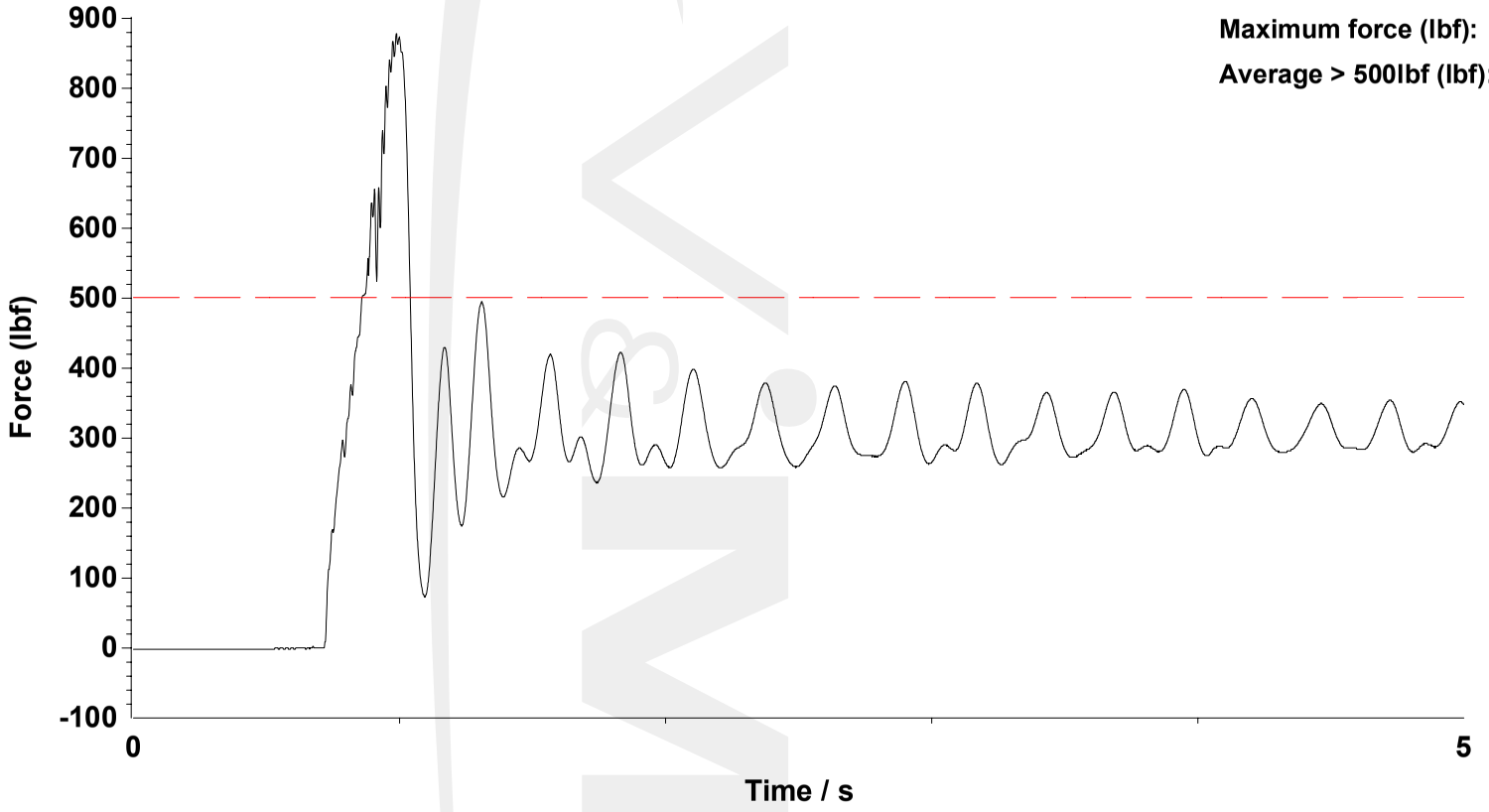
| | |
|---|---|
| Technician: | LJ |
| Standard | ANSI Z359.14:2021 Self-Retracting lanyard |
| Sample / File name: | 2L37109 |
| Drop item | Test weight, 141 kg |
| Orientation/Attachment Point: | Centre eyebolt |
| Time and Date of Test: | 18:03 21/11/23 |




Results do not achieve full ANAB status until a formal test report has been issued.

INSPEC Technical Services

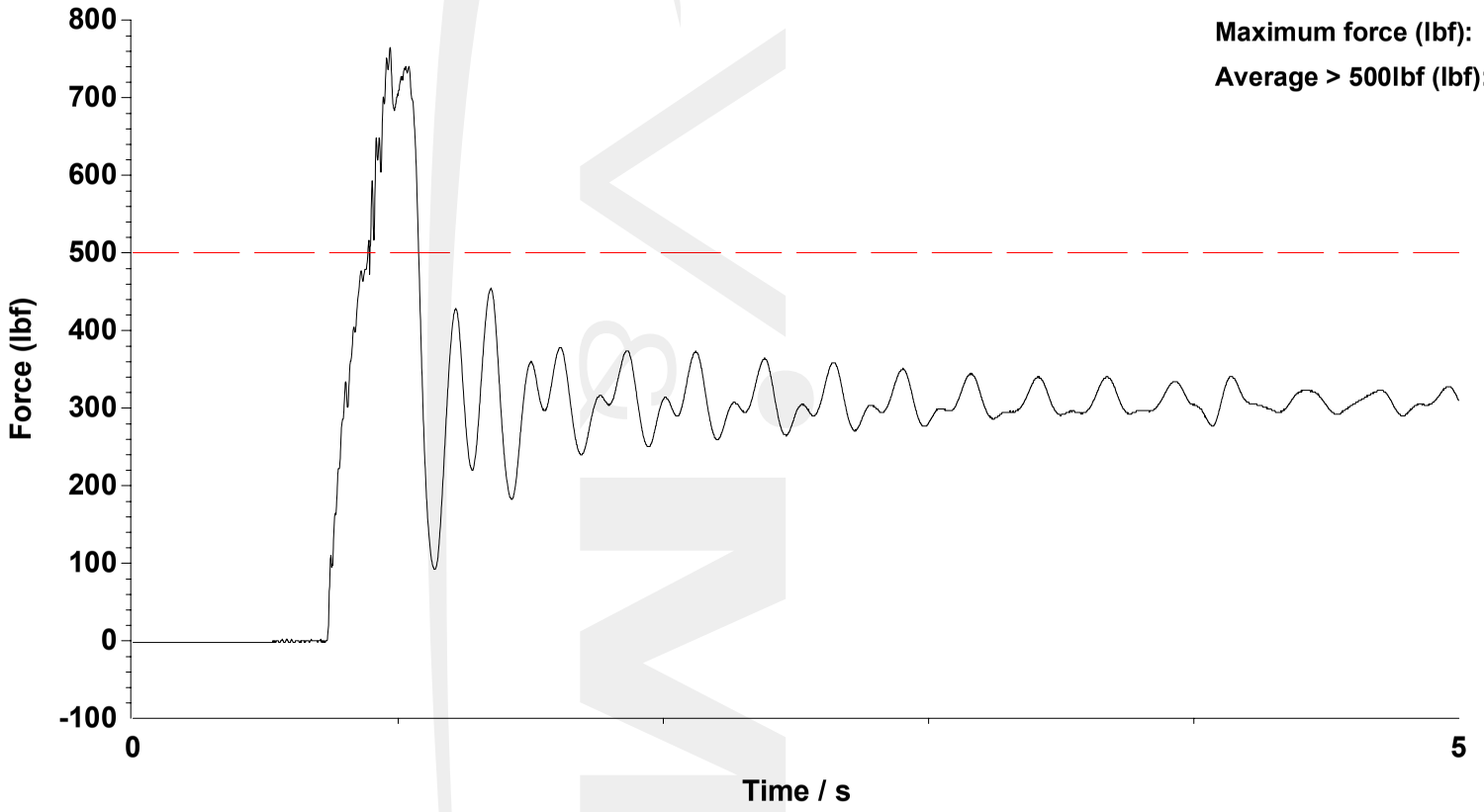
| | |
|---|---|
| Technician: | LJ |
| Standard | ANSI Z359.14:2021 Self-Retracting lanyard |
| Sample / File name: | 2L37110 |
| Drop item | Test weight, 141 kg |
| Orientation/Attachment Point: | Centre eyebolt |
| Time and Date of Test: | 18:08 21/11/23 |




Results do not achieve full ANAB status until a formal test report has been issued.

INSPEC Technical Services

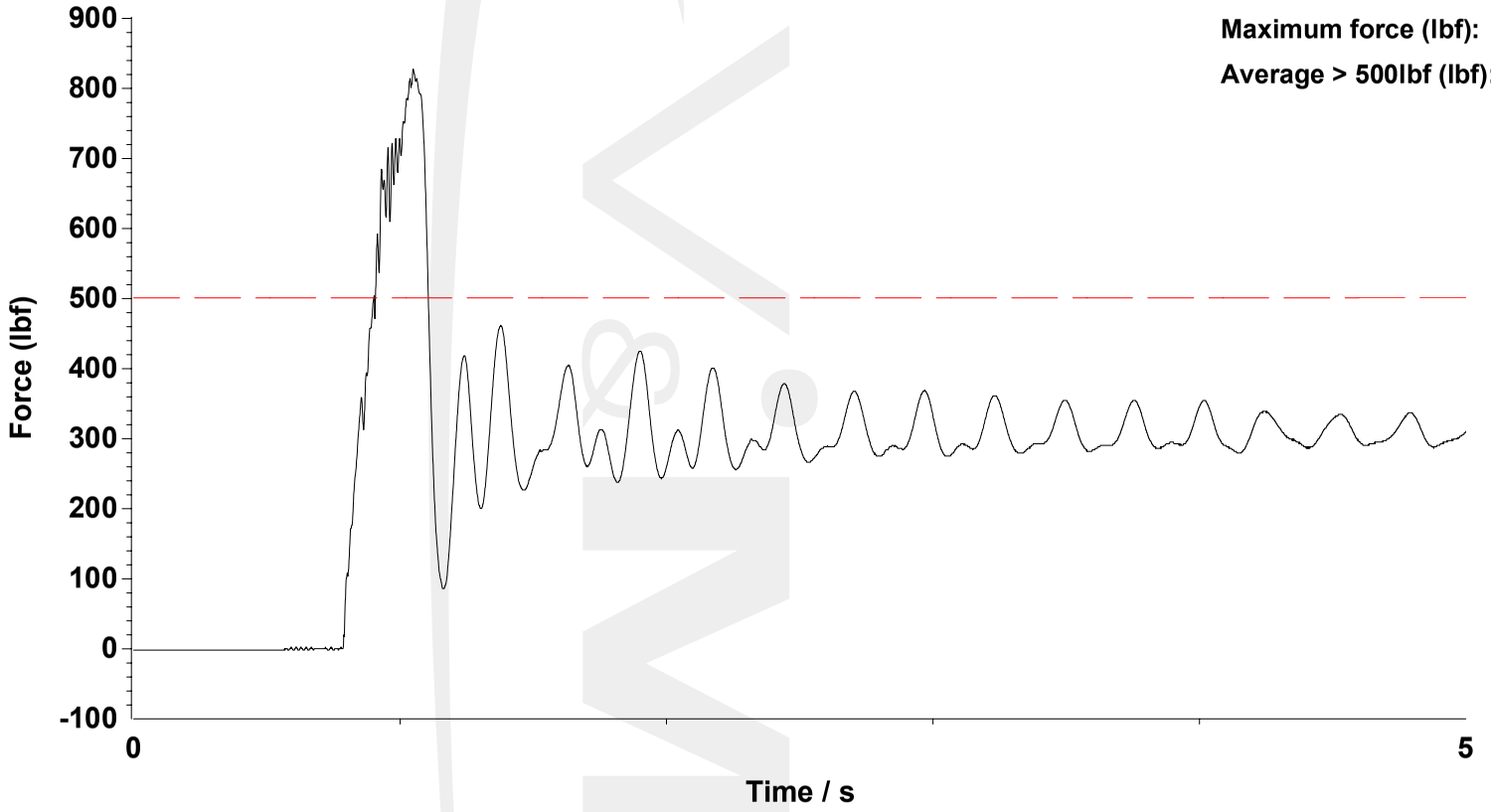
| | |
|---|---|
| Technician: | LJ |
| Standard | ANSI Z359.14:2021 Self-Retracting lanyard |
| Sample / File name: | 2L37114 |
| Drop item | Test weight, 141 kg |
| Orientation/Attachment Point: | Centre eyebolt |
| Time and Date of Test: | 18:32 21/11/23 |




Results do not achieve full ANAB status until a formal test report has been issued.

INSPEC Technical Services

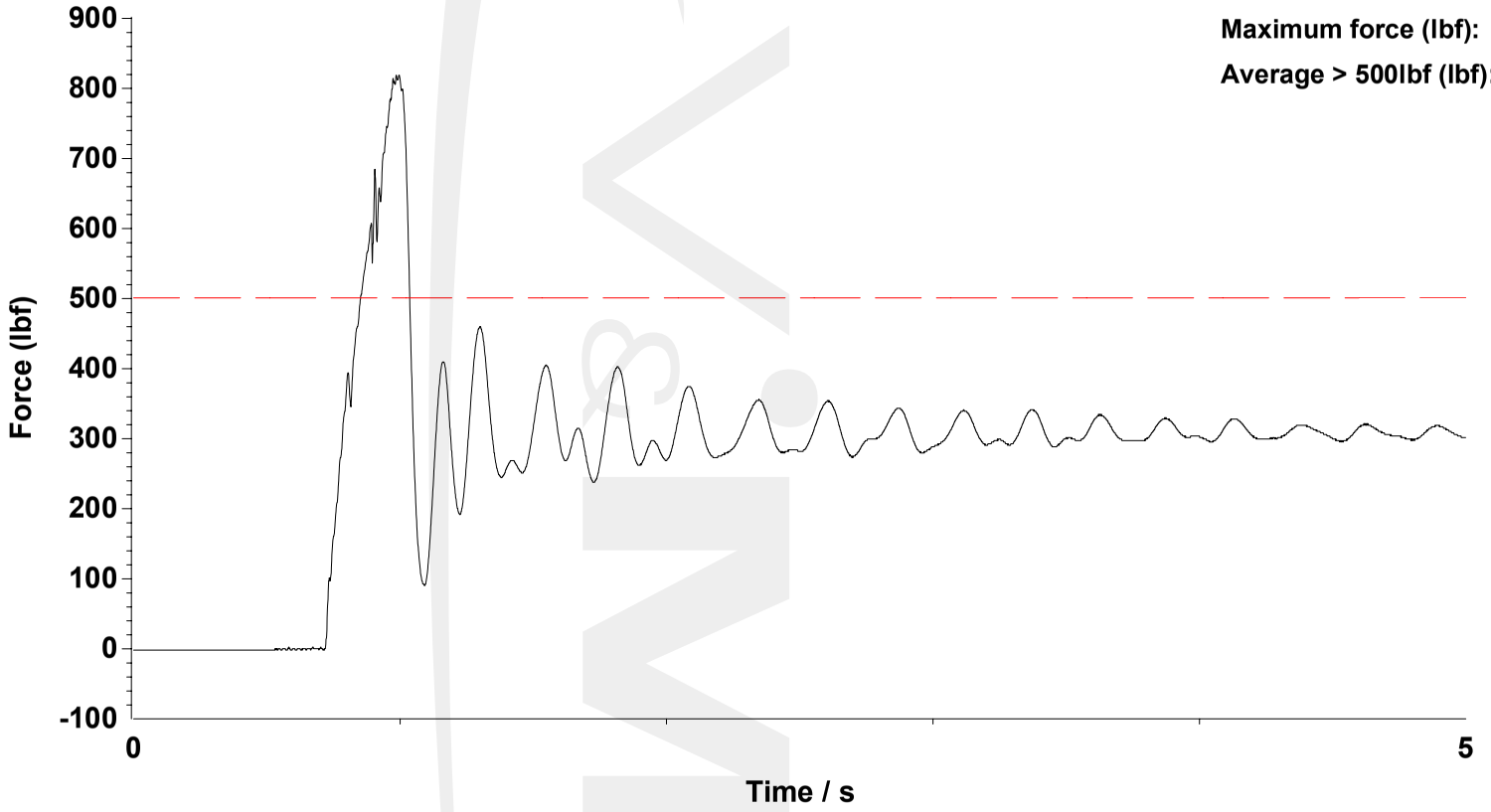
| | |
|---|---|
| Technician: | LJ |
| Standard | ANSI Z359.14:2021 Self-Retracting lanyard |
| Sample / File name: | 2L37115 |
| Drop item | Test weight, 141 kg |
| Orientation/Attachment Point: | Centre eyebolt |
| Time and Date of Test: | 18:37 21/11/23 |




Results do not achieve full ANAB status until a formal test report has been issued.

INSPEC Technical Services

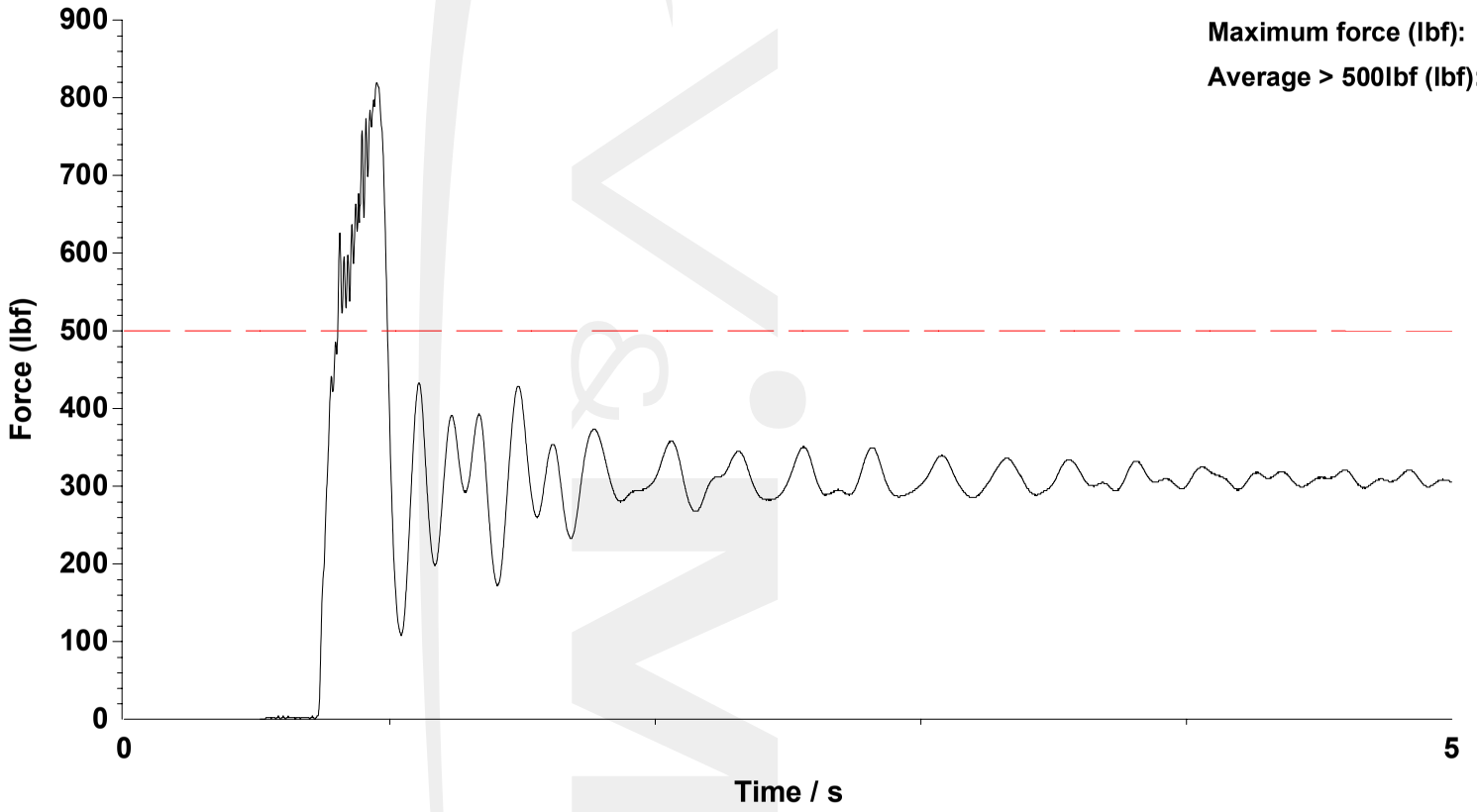
| | |
|---|---|
| Technician: | LJ |
| Standard | ANSI Z359.14:2021 Self-Retracting lanyard |
| Sample / File name: | 2L37116 |
| Drop item | Test weight, 141 kg |
| Orientation/Attachment Point: | Centre eyebolt |
| Time and Date of Test: | 18:42 21/11/23 |




Results do not achieve full ANAB status until a formal test report has been issued.

INSPEC Technical Services

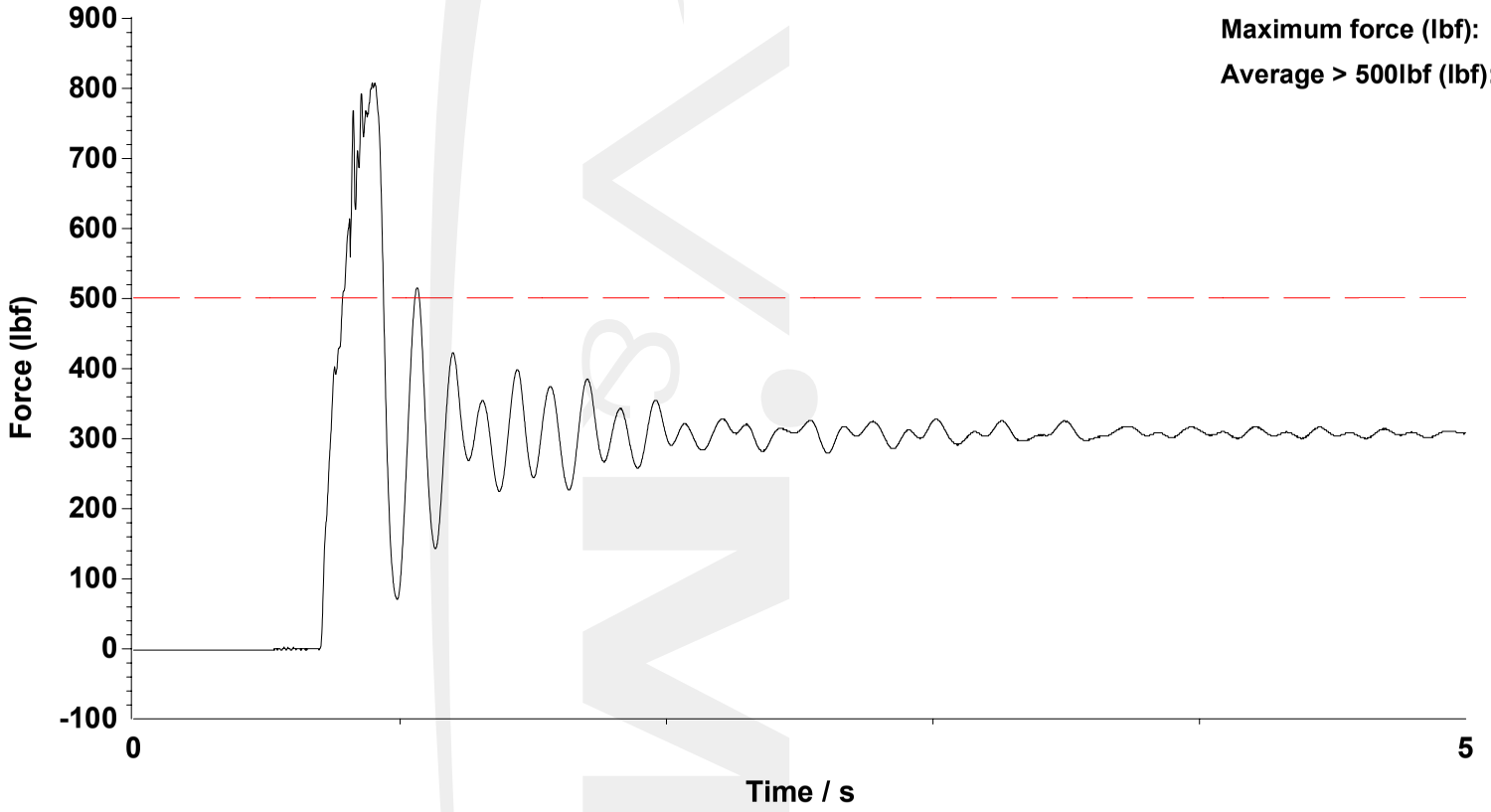
| | |
|---|---|
| Technician: | LJ |
| Standard | ANSI Z359.14:2021 Self-Retracting Lanyards |
| Sample / File name: | 2L37301 |
| Drop item | Test weight, 141 kg |
| Orientation/Attachment Point: | Centre eyebolt |
| Time and Date of Test: | 17:08 18/12/23 |




Results do not achieve full ANAB status until a formal test report has been issued.

INSPEC Technical Services

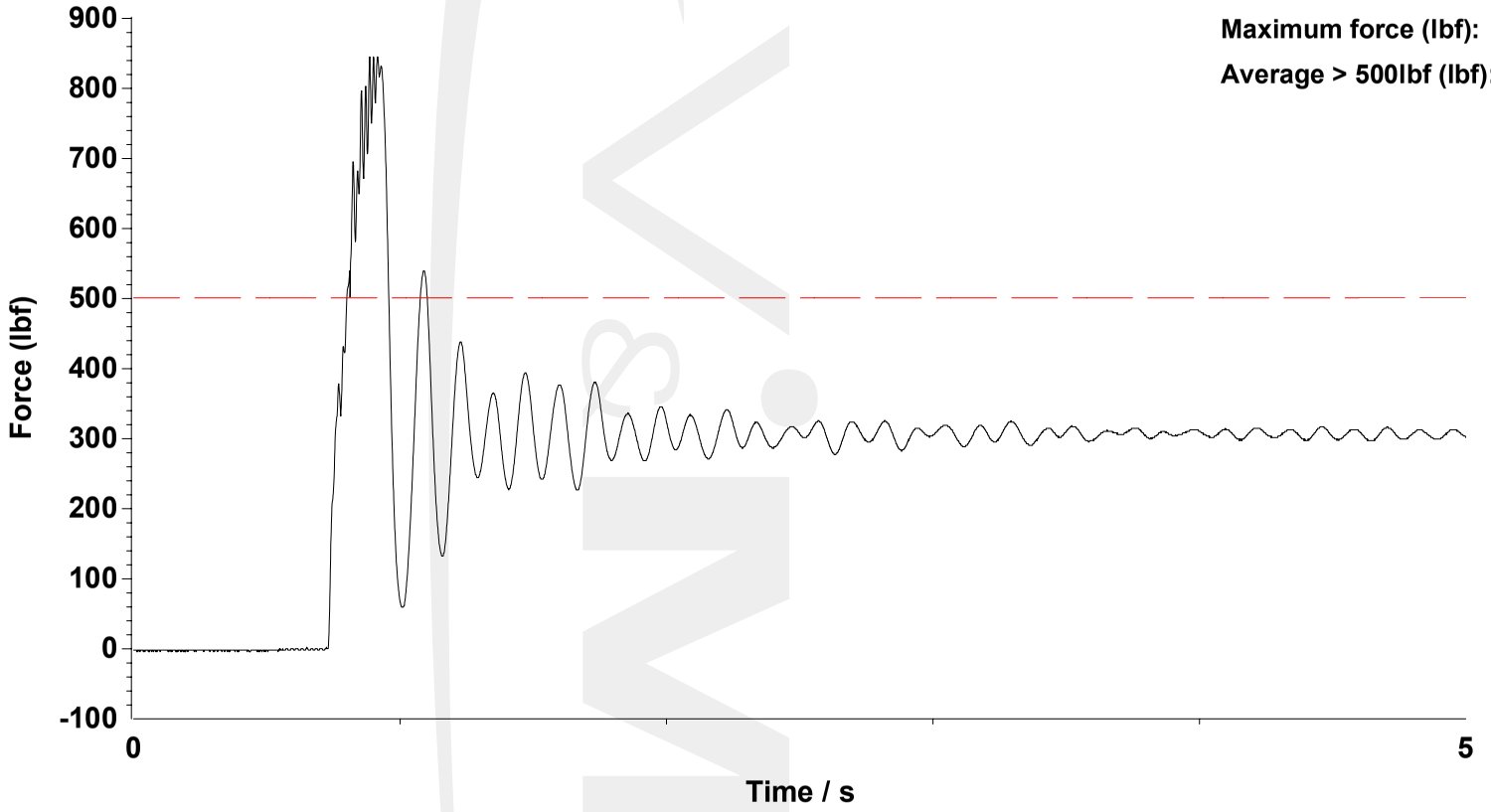
| | |
|---|---|
| Technician: | LJ |
| Standard | ANSI Z359.14:2021 Self-Retracting Lanyards |
| Sample / File name: | 2L37302 |
| Drop item | Test weight, 141 kg |
| Orientation/Attachment Point: | Centre eyebolt |
| Time and Date of Test: | 17:13 18/12/23 |




Results do not achieve full ANAB status until a formal test report has been issued.

INSPEC Technical Services

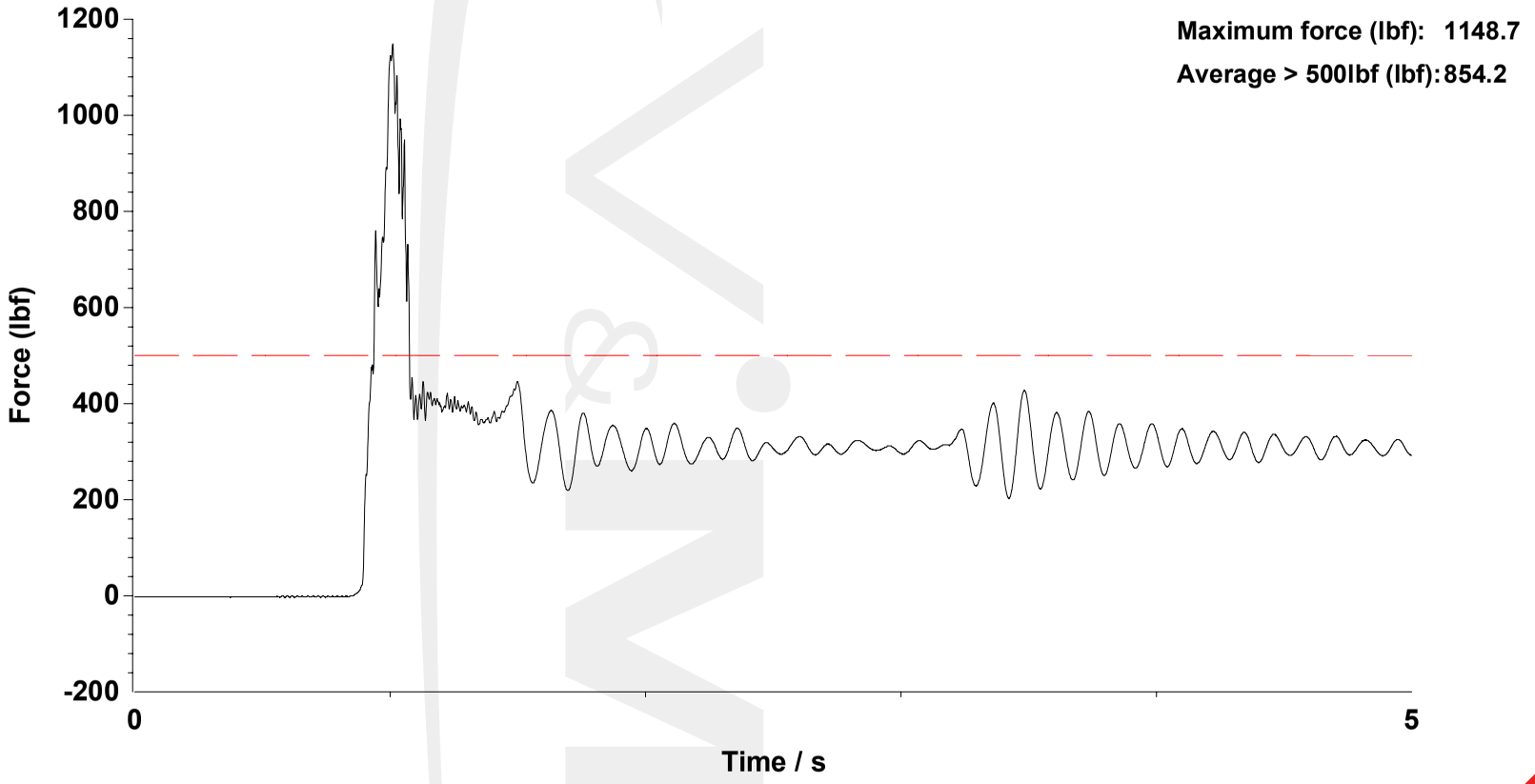
| | |
|---|---|
| Technician: | LJ |
| Standard | ANSI Z359.14:2021 Self-Retracting Lanyards |
| Sample / File name: | 2L37303 |
| Drop item | Test weight, 141 kg |
| Orientation/Attachment Point: | Centre eyebolt |
| Time and Date of Test: | 17:18 18/12/23 |




Results do not achieve full ANAB status until a formal test report has been issued.

INSPEC Technical Services

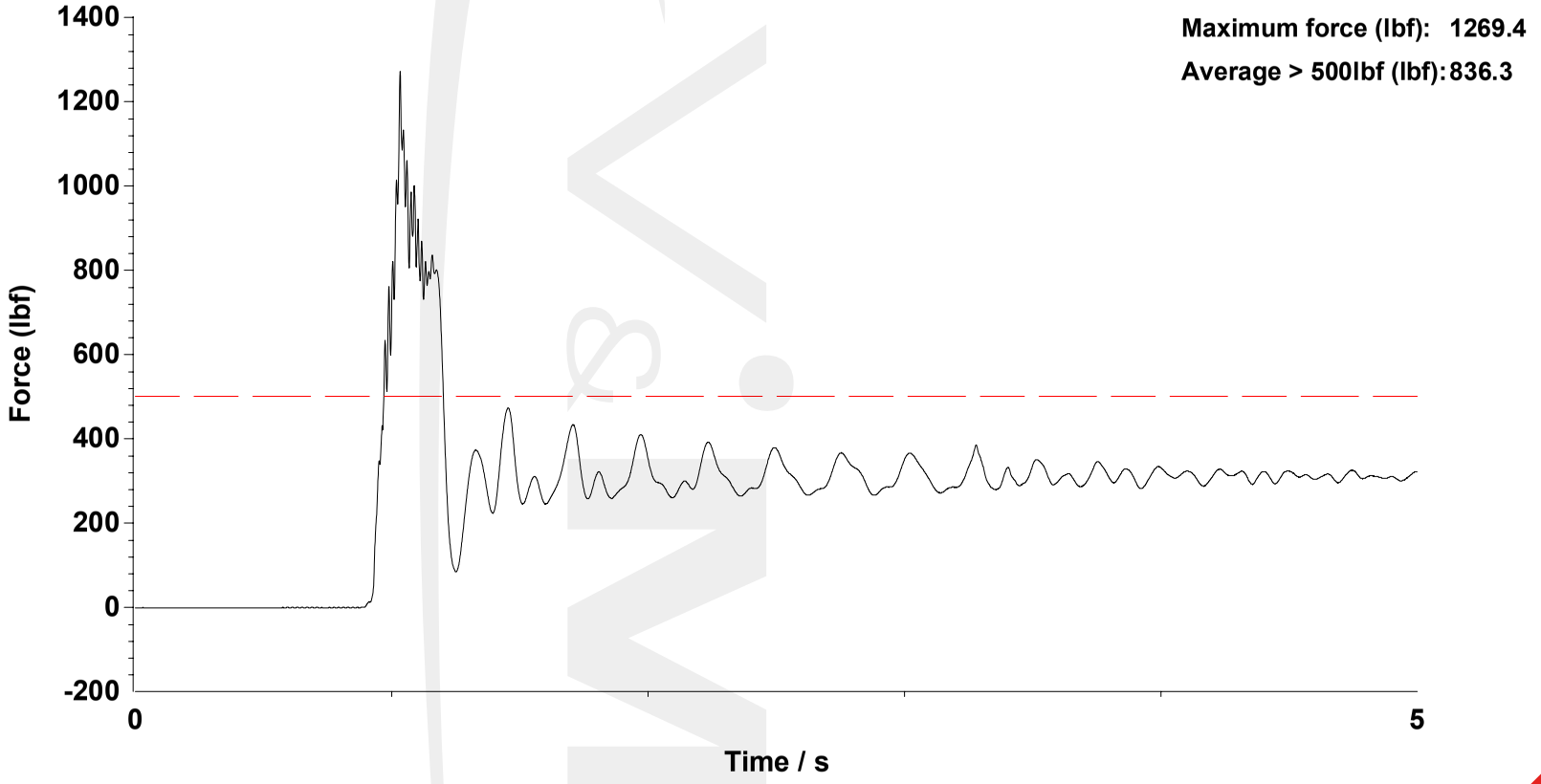
| | |
|---|---|
| Technician: | LJ |
| Standard | ANSI Z359.14:2021 Self-Retracting Lanyard |
| Sample / File name: | 2L37129 |
| Drop item | Drop weight, 141 kg |
| Orientation/Attachment Point: | Centre eyebolt |
| Time and Date of Test: | 11:24 12/12/23 |




Results do not achieve full ANAB status until a formal test report has been issued.

INSPEC Technical Services

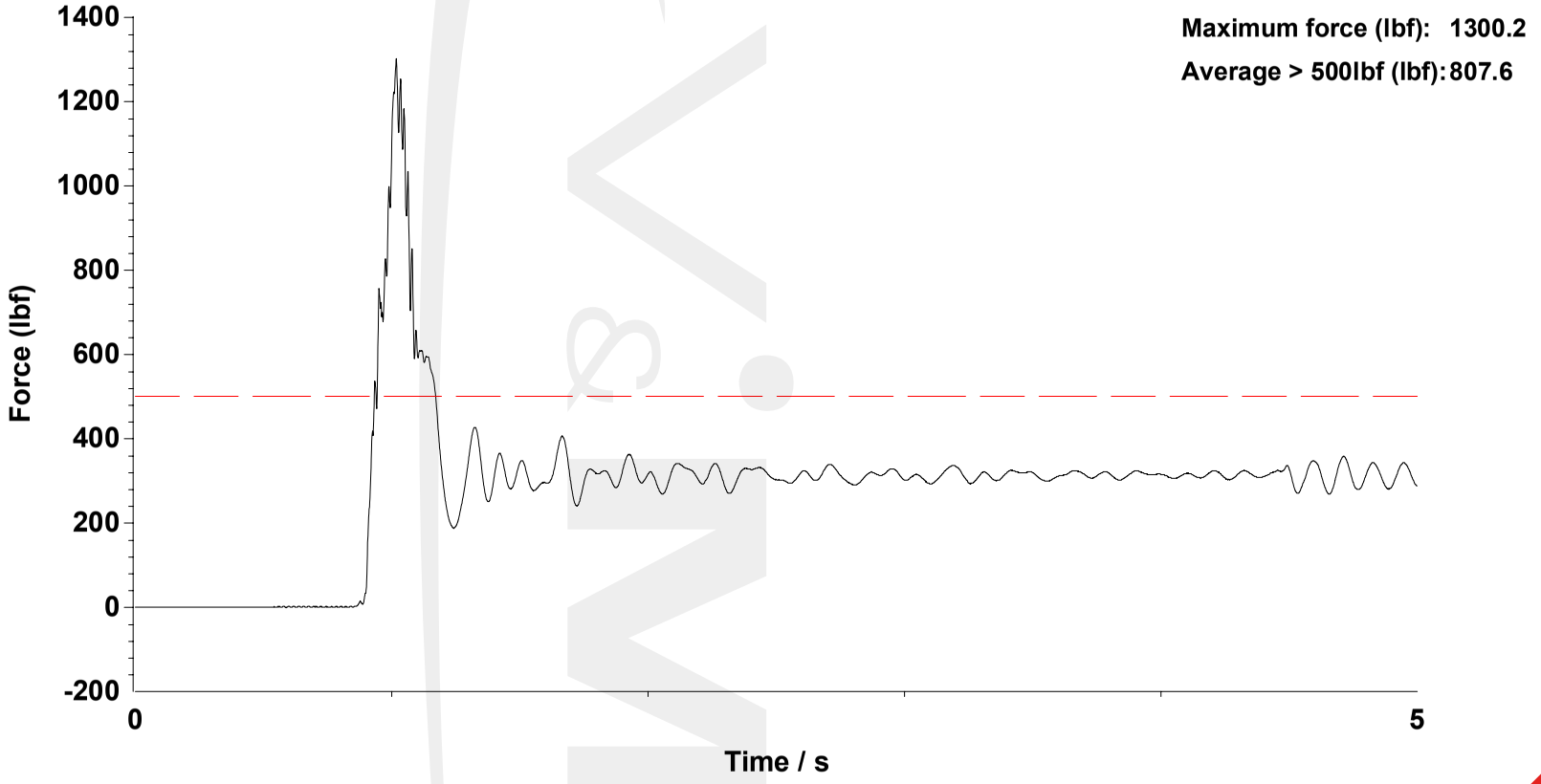
| | |
|---|---|
| Technician: | LJ |
| Standard | ANSI Z359.14:2021 Self-Retracting Lanyard |
| Sample / File name: | 2L37130 |
| Drop item | Drop weight, 141 kg |
| Orientation/Attachment Point: | Centre eyebolt |
| Time and Date of Test: | 11:32 12/12/23 |




Results do not achieve full ANAB status until a formal test report has been issued.

INSPEC Technical Services

| | |
|---|---|
| Technician: | LJ |
| Standard | ANSI Z359.14:2021 Self-Retracting Lanyard |
| Sample / File name: | 2L37132 |
| Drop item | Drop weight, 141 kg |
| Orientation/Attachment Point: | Centre eyebolt |
| Time and Date of Test: | 11:46 12/12/23 |




Results do not achieve full ANAB status until a formal test report has been issued.

Industrias Gabuteau SA -
Self-Retracting Devices, model SRL-C11


INSPEC Testing Services' specimen 2L37301

18 December 2023